



EU efforts to strengthen nuclear security

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Executive summary

Nuclear safety and security are absolute priorities for the European Union (EU). The nuclear security summit in 2010 in Washington confirmed the validity and direction, and further strengthened the EU efforts to effectively contribute to increased nuclear security, both inside Europe and worldwide. The nuclear accident at Fukushima in 2011 triggered additional activities, also in the EU, in the area of nuclear safety, nuclear security and emergency preparedness. In view of the upcoming Nuclear Security Summit in Seoul in 2012 this staff working document presents recent EU achievements and priorities in those fields, in particular since 2010.

The Euratom Treaty, in force since 1957, is an important cornerstone of the EU engagement in nuclear safety and security. Through Euratom, the EU operates an effective regional nuclear safeguards system, implementing inspections, reporting and providing technical and scientific support to its Member States, in close partnership with the International Atomic Energy Agency (IAEA). This resulted in reaching full compliance with the additional protocol and in the achievement of integrated safeguards in all EU Non Nuclear Weapon States having significant nuclear activities. It can serve as a model by excellence for other regions worldwide considering to implement the concept of "neighbours checking neighbours". At the same time, the EU implements a concept of assurance of supply through its Euratom Supply Agency. This model was one of the inspirations for the recent development of what is called multilateral nuclear approaches.

The EU Common Foreign Security Policy, as well as the adoption since 2003 of the European Security Strategy, the EU strategy against proliferation of Weapons of Mass Destruction (WMD), the EU Counter Terrorism Strategy (2005) and the New Lines for Action in combating the proliferation of WMD and their delivery systems endorsed in 2008, all together reinforce the EU commitment to nuclear security. In line with the Resolution

1540 of the United Nations Security Council (UNSCR 1540)¹ and its WMD strategy, the EU requires the insertion of non-proliferation clauses in all its agreements with third countries. The accession of Euratom to the amended Convention on the Physical Protection of Nuclear Material (CPPNM)² was approved by the European Council in 2007, and ratification is expected to be completed soon by all Member States and Euratom.

In the area of combating illicit trafficking of nuclear and radiological materials, significant progress has been made in recent years, both through the implementation of an EU-internal action plan on chemical, biological, radiological and nuclear security³ and by outreach activities of the EU under its Instrument for Pre-accession, Instrument of Nuclear Safety Cooperation, Instrument for Stability and under the recently created CBRN Centres of Excellence⁴. The EU has developed particular expertise in forensic analysis of nuclear and radioactive materials, and developed training programmes for first front-line responders and national experts in the detection and identification of nuclear materials. Special mention in this area merits the EU-US collaboration in the area of testing and validation of detection equipment, the enhancement of border security and related training efforts through the Border Monitoring Working Group (BMWG) and the progress in the area of nuclear forensics, also through the Nuclear smuggling International Technical Working Group (ITWG).

¹ See <http://www.un.org/sc/1540/>

² See <http://www.iaea.org/Publications/Documents/Conventions/cppnm.html>

³ Communication from the Commission to the European Parliament and the Council on Strengthening Chemical, Biological, Radiological and Nuclear Security in the European Union – an EU CBRN Action Plan - COM(2009) 273 final (24.6.2009)

⁴ See http://www.cbrn-coe.eu/coe_initiative.html

Export control of dual use items is indirectly related to nuclear security in the sense that it contributes to non proliferation of nuclear weapons and their means of delivery. The EU has a unique legal basis, in the form of its *EU Dual Use Regulation*⁵.

In the field of nuclear safety and waste management, radioprotection and emergency response, the EU and its Member States have developed common frameworks. After the adoption of the EU nuclear safety directive in 2009⁶ and the adoption in 2011 of new legislation on spent fuel and radioactive waste management⁷, the EU framework for radiation protection is currently being revised *inter alia* in view of fully integrating the regulatory control of radioactive sources. The key aim is to align the provisions with the IAEA Code of Conduct⁸, particularly in respect of high-activity sources. In the area of radioactive transports, a legislative proposal has been introduced which will establish an EU-wide system of registration of transporters of radioactive materials ensuring that national competent authorities are aware of carriers on their territory⁹. With a large free internal market, customs co-operation across the EU has been enhanced throughout the whole EU external border.

⁵ Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items (OJ L 2009:134/1)

⁶ Council Directive 2009/71/EURATOM of 25 June 2009 establishing a Community framework for the nuclear safety of nuclear installations (OJ L 2009:172/18)

⁷ Council Directive 2011/70/EURATOM of 19 July 2011 establishing a Community framework for the responsible and safe management of spent fuel and radioactive waste - OJ L 2011:199/48

⁸ Code of Conduct on the Safety and Security of Radioactive Sources (<http://www-ns.iaea.org/tech-areas/radiation-safety/code-of-conduct.asp>)

⁹ Proposal for a Council regulation establishing a Community system for registration of carriers of radioactive materials - COM(2011)518 final (30.8.2011)

Synergies between safety and security applicable to existing installations are possible, in particular in the area of emergency preparedness and mitigation. The technologies used for assessment of plant response to accidents can be used for both safety and security purposes and the techniques and methods developed in the field of radioprotection are similar to some of those used in nuclear security. For future installations, synergies between safety and security are also to be guaranteed for the conception and design phase, to ensure that the new designs provide robust response to both safety and security concerns.

Following last year's tragic earthquake and following tsunami which struck the Japanese east coast, the European Council stressed at its March 2011 meeting the need to fully draw the lessons from this nuclear accident¹⁰. The EU has launched a comprehensive programme for reassessment (called "stress tests") of all the nuclear power reactors in the EU to ensure that they are not at risk from extreme events. The EU stress tests have two tracks, a safety track and a security track¹¹. The safety assessments include an objective peer review process in order to validate the findings. When complete, the output from these stress tests will also yield important lessons for both nuclear safety and nuclear security. The EU neighbouring countries operating, owning or planning nuclear power plants have also committed to perform similar stress tests, and the European experience gained with this process can benefit nuclear safety and security worldwide.

¹⁰ Conclusions of the European Council (24/25 March 2011) - EUCO 10/1/11 REV 1 (<http://register.consilium.europa.eu/pdf/en/11/st00/st000002-re01.en11.pdf>)

¹¹ See for instance the Communication from the Commission to the European Parliament and the Council on the interim report on the comprehensive risk and safety assessments ("stress tests") of nuclear power plants in the European Union - COM(2011) 784 final (24.11.2011)

This exercise is complemented by an increased attention to emergency preparedness. In this area the EU continues to rely upon its information exchange and reporting mechanisms -- European Community Urgent Radiological Information Exchange (ECURIE) and European Radiological Data Exchange Platform (EURDEP) -- from which the reporting standards have been taken over by IAEA to now serve as worldwide reporting mechanisms. The EU civilian protection is also contributing to improve the effectiveness of systems for responding to natural, technological or man-made disasters in Europe.

Finally, the EU supports the international dimension of nuclear safety and security through enhanced co-operation with the IAEA, and continues its support to the G8 Global Partnership programmes, as well as the implementation of the UNSCR 1540. The EU contributes actively to the Global Initiative to Combat Nuclear Terrorism (GICNT)¹², including the working groups of the Implementation Assessment Group. Cooperation in the field of nuclear security has also been enhanced with our major partners.

Recognizing this progress, the EU continues to strive for further enhancing nuclear security and this report serves to illustrate this commitment.

¹² See <http://www.state.gov/t/isn/c18406.htm>

Nuclear security inside Europe

EU nuclear fuel cycle and the implementation of the Euratom Treaty

In the EU, the nuclear fuel cycle is fully represented. The nuclear facilities and their related activities, the stocks of nuclear materials and advanced technology represent a formidable task for the full implementation of security, including safeguards. The EU is the unique example in the world because:

- EU possesses its own supranational safeguards system based on article VII of the EURATOM Treaty which endows the executive body of the EU with full independent inspection capabilities. EURATOM Safeguards are fully implemented in both EU Non Nuclear Weapon States (NNWS) and EU Nuclear Weapon States (NWS).
- In the EU, the NNWS and NWS co-exist.
- In the EU the two primary deciding factors of the multilateral nuclear arrangements (MNA) are effectively implemented, which are the assurance of non-proliferation and the assurance of supply and services. There is actually a de facto implementation of an MNA concept of "joint facilities" in the EU gas-centrifuge enrichment plants (GCEPs) among a number of other facilities.

As a consequence and as foreseen by MNA expectations, the EU GCEPs ensure

at the same time a strong oversight of technology and staffing proper division of expertise and effective safeguards.

- Independent EURATOM Supply Agency.
- R&D financial and human resources which contribute to nuclear security including safeguards.

EU R&D in safeguards has been instrumental in fostering technological advances which have led to an increase in the effectiveness and efficiency of safeguards activities. Namely, in the field of enrichment plants and associated conversion processes, safeguards verification activities have become more effective as a consequence of the advances in chemistry and sensor technology.

Finally, it is important to mention the synergies between supervised systems of *nuclear material accounting and control (NMAC)* and nuclear security. The Euratom safeguards system supervises all the EU nuclear operators' NMAC providing a valuable assurance which is the base for the implementation of security measures such as physical protection.

The EU chemical, biological, radiological and nuclear (CBRN) action plan

The EU CBRN Action Plan was adopted in December 2009. The Action Plan aims to strengthen CBRN security throughout the EU. Based on an all-hazard approach, the Action Plan's overall goal is to reduce the threat of, and damage from CBRN incidents of accidental, natural and intentional origin, including terrorist acts. The Action Plan

contributes to the implementation of the EU Counter Terrorism Strategy.

The Action Plan provides for three main areas of CBRN security work:

- Prevention: ensuring that unauthorized access to CBRN materials of concern is as difficult as possible;

- Detection: having the capability to detect CBRN materials in order to prevent or respond to CBRN incidents;
- Preparedness and response: being able to efficiently respond to incidents involving CBRN materials and recover from them as quickly as possible.

A total of 124 actions are to be implemented by the EU Member States and the EU Institutions. In addition to 25 actions relating to radiological and nuclear security, there are 32 actions covering biological or chemical security. A further 67 actions are horizontal actions in the sense that they apply to more than one area.

In order to avoid duplication, any new EU measure in this field should be coherent with the existing national and international regulations and draw upon existing work in relevant international organisations.

The implementation of the Action Plan is guided by consultation with national authorities and other relevant stakeholders such as the private sector, the health care sector, and academic institutions. The IAEA, Interpol, and Europol are closely associated to the implementation of the Action Plan.

Examples of Radiological and Nuclear actions include:

- ensuring close coordination between law enforcement and facilities holding high risk radioactive sources;
- encouraging recovery programmes for disused high risk sources;
- examining the feasibility of setting up an electronic system to manage cross-border transfers of sources;
- examining how the IAEA Code of conduct and the accompanying guidance on import/export can best be implemented within the EU's single market;
- examining possible support to the IAEA to bring improvements to the IAEA's Illicit Trafficking Database;

- critically assessing existing rapid alert and information exchange systems;
- developing modelling tools adapted to the threat from radiological dispersion devices in an urban environment;
- supporting research and development projects addressing detection and response.

Examples of horizontal actions include:

- analysis of penal legislation concerning CBRN terrorism and acts of WMD proliferation by non-state actors,
- an EU-wide stocktaking on good practices on reporting of suspicious transactions in relation to CBRN materials,
- benchmarking existing computer codes which model dispersion of CBRN materials in the environment.

Furthermore, a European Nuclear Security Training Centre (EUSECTRA) is being developed. Training areas would include nuclear detection, response and nuclear forensics. A dedicated detection area with different types of portal monitors and an area for subsequent inspection and investigation will be set up. Training sessions will begin during the spring of 2012. The first modules will cover core capabilities, radiological crime scene management, nuclear detection and nuclear forensics.

Europol activities in the area of CBRN

EUROPOL is an EU law enforcement agency which handles criminal intelligence and provides analysis in the area of serious international crime and terrorism.

Based on an all-hazard approach to the threat, EUROPOL conducts several activities that are aimed at assisting EU Member States in developing their capacity to prevent and respond to CBRN incidents.

Europol was also involved in the discussions to draw up the EU CBRN Action Plan and is also responsible for and a partner in the implementation of several actions within the Action Plan:

- Launching in October 2010 and maintenance of the EU Bomb Data System (EBDS). The EBDS is a dual system (for explosives and CBRN) available to all EU Member States, which includes two powerful incident databases: one for explosives and one for CBRN. It also has other very useful features such as specialised libraries and discussion forums where experts can share technical intelligence, experience and best practices. So far, 25 EU Member States and Norway are connected to it, with more than 600 individual (expert) users from more than 50 different competent authorities. This is the only international system of its kind, providing easy, secure and direct access to explosives and CBRN information and intelligence.

- Establishing the CBRN working group within an existing European Explosive Ordnance Disposal Network (EEOD Network) to facilitate the exchange of information and experience between specialised CBRN units, organising joint training exercises and updating them on recent developments. Regular meetings of the EEODN are organised twice a year. The first CBRN/EEODN conference will take place during the Danish EU Presidency in May 2012.
- Creation and participation in the Early Warning System for incidents related to Explosives, CBRN and Firearms, when terrorist involvement is suspected or not discarded. This mechanism provides an early notification on incidents such as disappearance, losses, recovery, or thefts of the materials or goods mentioned above.
- Project Rutherford: a joint EUROPOL and INTERPOL project whose outcome is a regularly produced analytical assessment of nuclear and radiological criminality in the EU (thefts, losses, attempted sales, smuggling, illegal disposal, and terrorism). It is based on incident data from both EUROPOL and INTERPOL Member States, IAEA's illicit trafficking database and open source information. The first Project Rutherford Situation Report was published on the 20th of January 2012.

EU CBRN resilience in civil protection

The European Commission is encouraging and facilitating cooperation between the 32 States participating in the Community Civil Protection Mechanism and Financial Instrument (the 27 EU Member States, Norway, Iceland, Lichtenstein, Croatia and the former Yugoslav Republic of Macedonia) in order to improve the effectiveness of systems for responding to natural, technological or man-made disasters in Europe. For this purpose, EU civil protection modules have been developed as pre-defined arrangements of response resources. They are composed of mobile/moveable resources from Participating States, are able to work independently as well as together with other modules and provide assistance inside and/or outside the EU, are self-sufficient, interoperable and can be dispatched at very short notice (generally within 12 hours following a request of assistance) and are equipped, trained and operated in accordance with acknowledged international guidelines. Two of the 17 types of modules that have been defined at European level are CBRN specific – CBRN detection and sampling, and search and rescue in CBRN conditions.

These pre-defined response resources can be mobilised and deployed at the request of a country affected by a nuclear or radiological incident overwhelming its response capacity. Through the same Mechanism additional civil protection assets and expertise may also be requested and mobilised support to the overall response of authorities. If requested the Commission may cover up to 50% of the transport costs through the European Civil Protection Financial Instrument¹³.

¹³ Council decision of 5 March 2007 establishing a Civil Protection Financial Instrument (Text with EEA relevance) (2007/162/EC, Euratom) – OJ L 2007:71/9

Council decision of 8 November 2007 establishing a Community Civil Protection Mechanism (recast) (Text with EEA relevance) (2007/779/EC, Euratom) – OJ L 2007: 314/9

EU customs play also an important role when it comes to radiation and nuclear detection

Customs co-operation across the EU takes a range of forms throughout the whole EU external border, whether maritime, air or land border.

EU custom officers operate Radiation Detection Portals in the main European ports participating in the Megaports initiative that started in 2003. The Megaports initiative is a key non-proliferation program of the U.S. Department of Energy's National Nuclear Security Administration (DOE/NSSA). One of the main objectives is to check as many containers as possible, regardless of their destination and with a minimal impact to port operations. These portals have been very useful to detect contaminated containers from Japan during the Fukushima crisis.

As a response to the Fukushima crisis, the European Commission has activated the first customs crisis management alert through the Customs Risk Management System (CRMS).

European profiles were established with the aim of being transposed into national risk management systems. A platform of communication was opened in CRMS in order to enable the Commission to transmit all relevant information to the customs administrations and to allow EU customs services to exchange risk information and share their views on problems encountered and ways forward.

In the context of this particular crisis, European Customs have been very fast and responsive and have provided crucial information on the state of play of the risks from an EU perspective. From the 11th of March 2011 till the 30th of September 2011, Member states have reported 75 445 hits, 8 040 documentary controls and 5 025 physical checks at the EU border. Those controls were carried out on the basis of specific risk profiles and/or systematic RN measurement of containers. They have led to the identification of 5 irregularities (different cases of contaminated containers, tea leaves and private cars).

Export control on dual use goods in the European Union

Export control of dual use items is indirectly related to nuclear security in the sense that it contributes to non proliferation of nuclear weapons and their means of delivery.

The *EU Dual Use Regulation*¹⁴ enables the EU Member States authorities to control in particular export of nuclear dual use items and technologies that are listed in the Nuclear Suppliers' Group but also transit and brokering. The Regulation also allows the EU Member States to control certain other dual use items in case of risk of diversion towards weapons of mass destruction.

¹⁴ Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items - OJ L 2009:134/1

Nuclear and radiological security R&D activities

The FP7 Security Research programme 2007-2013¹⁵

Under the Seventh Framework Security programme of the European Commission, a part of the funding is allocated to R&D projects in the field of CBRN security. The part related to Radiological security in the CBRN projects currently represents about 54M€.

The projects cover large areas of CBRN security. As an example one can mention the following projects¹⁶

CATO: Toolbox for CBRN crisis management

COCAE: Handheld detector for radioactive sources

FRESP: Respiratory protection system for first responders

IMSK: Integrated CBRN mobile security kit for large events, common operational picture

MULTIBIODOSE: Bio-dosimetric tools for mass casualty radiation accident

PRACTICE: Preparedness and resilience against CBRN attack

SecurEau: Detection of contaminated water distribution system and decontamination

IF REACT: Improved first responder ensembles against CBRN terrorism

SLAM: Under negotiation - Standardisation of CBRN measurement

New projects are under evaluation and their implementation would be during the year 2012 and cover the following areas:

- A large CBRNE demonstration which aims at demonstrating the capabilities of preventing, detecting and response to CBRN events (system of systems).
- Improving drinking water security against CBRN-related contamination in major municipalities and securing food chains against CBRN contamination.

¹⁵ Council Decision 2006/971/EC of 19 December 2006 concerning the Specific Programme Cooperation implementing the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007 to 2013) – OJ L 2006:400/86

¹⁶ http://cordis.europa.eu/fp7/security/projects_en.html

Examples of R&D projects carried out by the European Commission Joint Research Centre

The JRC provides technical and scientific support to the implementation of EU policies and places particular importance on efforts in the field of security. In the nuclear security field and through the Framework Programme of the European Atomic Energy Community for nuclear research and training activities¹⁷, the JRC has developed significant expertise in various areas, such as the detection of undeclared activities, the diversion of nuclear material or theft of radioactive sources associated with illicit trafficking of such material or sources, as well as related training.

Testing radiation detection equipment to be used in the fight against illicit trafficking

The European Commission and the US Department of Homeland Security (DHS-DNDO), in cooperation with the IAEA and the US Department of Energy (DoE), are jointly implementing the Illicit Trafficking Radiation Assessment Program (ITRAP+10).

The ITRAP+10 project carries out an evaluation and comparison of the performance of available radiation detection equipment relevant to nuclear security. The results will

provide an independent assessment of the available radiation detection equipment on the market which will serve as a reference for regulatory and other EU Member State authorities to identify equipment and or families of equipment to address their particular needs, and help to ensure common standards at an international level. The manufacturer will get recommendations to improve performance, reliability and user-friendliness of the equipment. Up to now, a total of 95 instruments have applied to be tested under the ITRAP+10. Currently the testing of equipment is ongoing in the European Commission facilities in Ispra (Italy).



Picture: Hand held devices at the Ispra testing laboratory

¹⁷ Council decision of 19 December 2011 concerning the specific programme, to be carried out by means of direct actions by the Joint Research Centre, implementing the Framework Programme of the European Atomic Energy Community for nuclear research and training activities (2012-2013) (2012/95/Euratom) – OJ L 2012: 47/40

Active detection of nuclear materials

To contribute to future detection systems with newly developed techniques or technical systems, the European Commission's laboratory at the site in Ispra relies on its Pulse Neutron Interrogation Assay (PUNITA) facility. A pulsed neutron source emits very short bursts of high energy neutrons that are sent out on "unknown objects", where the neutrons interact with all the material and finally many photons and neutrons leave this region of interaction. Several radiation detectors surround the object and detect the response. Sophisticated methods are being studied to interpret the detector signals, especially with the aim to discover signs which prove the presence of fissile material. The image shows the neutron generator (a), a liquid scintillation detector (b) and a sample of depleted Uranium with only 0.5 grams of the fissile isotope uranium (^{235}U). In other experiments, this sample is well shielded to hide it, and the challenge is to detect it.

The experiments and tests also follow the aim to make new, very fast scintillation detectors available for the simultaneous detection of neutron and gamma radiation. The hope is to provide the users of such equipment a day with highly efficient and non expensive

radiation detectors. This research is brought forward in close cooperation with other research institutes.



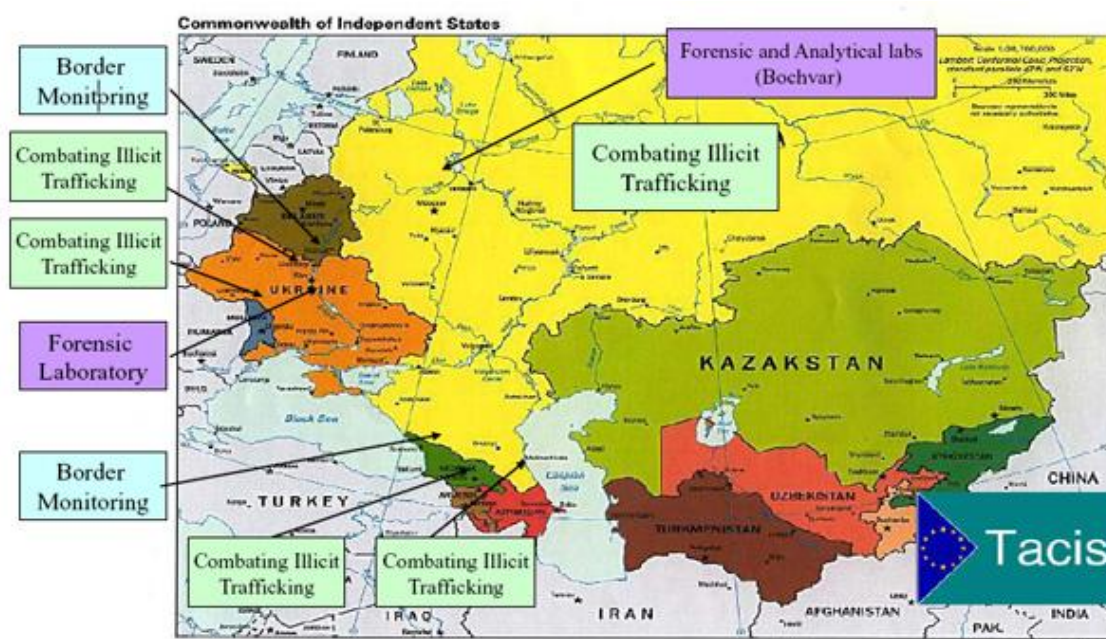
Picture: Pulse Neutron Interrogation Assay (PUNITA) facility

EU nuclear security activities outside Europe

Nuclear Security projects within the instrument for stability

The Instrument for Stability¹⁸ allocates nearly €300 million to its component relating to Chemical, Biological, Radiological and Nuclear risk mitigation over the period 2007-2013. Whilst most of the projects were not designed to differentiate between radiological and nuclear parts on one hand and chemical and biological on the other hand, some individual projects focused on illicit trafficking of nuclear materials or sharing information on CBRN incidents, the latter involving also IAEA.

Building on the activities funded under TACIS, the Instrument for Stability is also contributing to the international effort in support of the (International Science and Technology Centre, Moscow (ISTC), and Science and the Technology Centre, Kiev (STCU). In 2009 an initiative was launched under the Instrument for Stability for the creation of CBRN Centres of Excellence



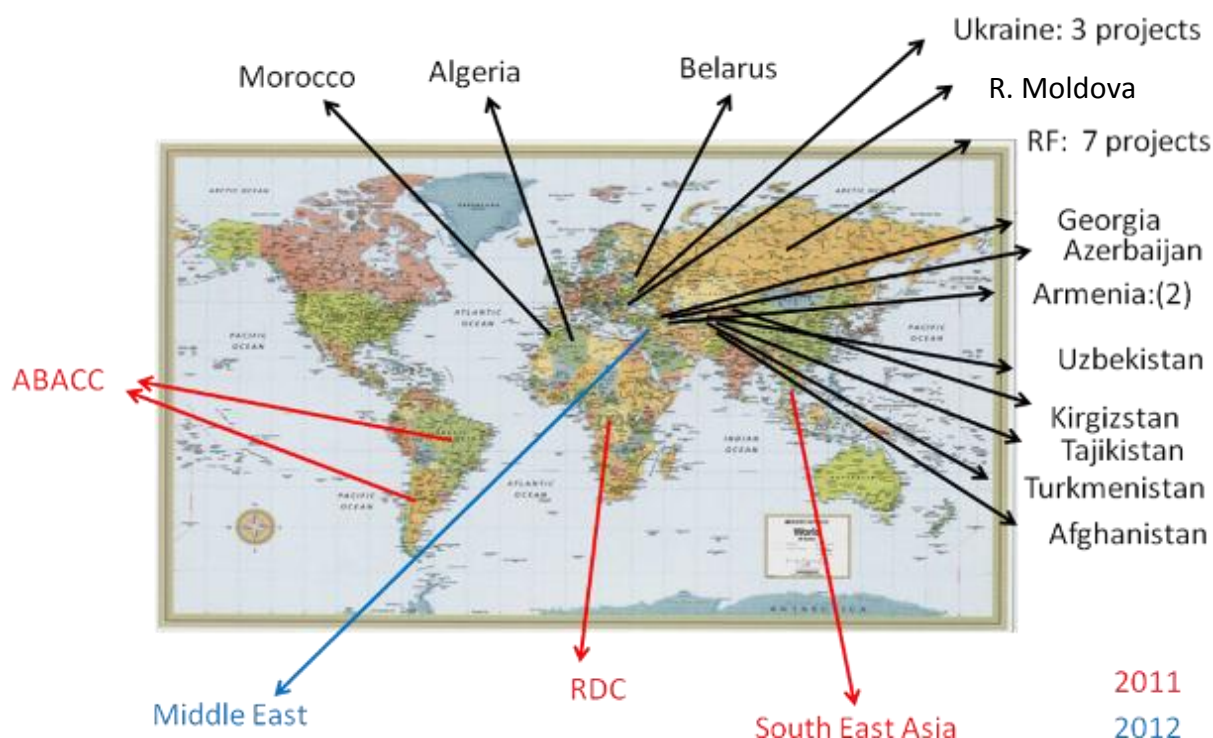
Picture: Example of TACIS Nuclear Security projects

¹⁸ Regulation (EC) No 1717/2006 of the European Parliament and the Council of 15 November 2006 establishing an Instrument for Stability - OJ L 2006:327/1

Detection of nuclear and radioactive materials at borders

Within the international efforts to interdict, deter and counteract illicit trafficking of nuclear and radioactive materials, the EU through the Joint Research Centre, deploys European assistance in the field based on its technical expertise. Started under the Technical Assistance to the Commonwealth of

Independent States (TACIS) between 1994 and 2006, the program has now developed worldwide under the current Instrument for Stability since 2007. The evolution of, and planning, from the last years of project development and implementation is depicted in the figure below.



The typical support includes not only deployment of detection equipment and corresponding training but also addresses national action plan to respond to illicit movements of sensitive materials. Projects are currently implemented in the Former Soviet Union (Russian Federation, Ukraine and Belarus), the Caucasus (Georgia, R. Moldova, Armenia, Azerbaijan), Central Asia (Uzbekistan, Tajikistan) and the Mediterranean Basin (Morocco and Algeria). Some of the

projects are implemented jointly with the US Second Line of Defense (SLD) program. The program is engaging new countries in South East Asia (Cambodia, the Philippines, Thailand and Laos) and Africa (Democratic Republic of the Congo). In the newest projects,

a particular emphasis is put on the deployment of regional competences as appropriate and will be implemented in connection with the Centres of Excellences.

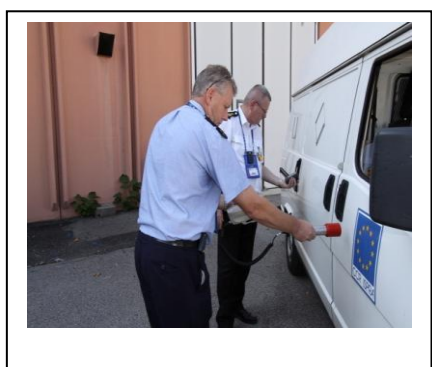
Picture:
Installation of
detection
Equipment in
the Caucasus
region



Nuclear security training programmes for border guards and custom officers

Sustainability of efforts in deployment of border security equipments relies heavily on the quality of training for the services involved as well as local capacity building, either nationally or regionally and thus on the capacity to develop and deliver indigenous training schemes. The European Commission has set up, since 2009, with the support of the US National Nuclear Security Administration,

the SLD program, a dedicated nuclear Security Training program focusing on border detection at its laboratories in the Ispra site. This allows the European Commission to provide training sessions for border guards and custom officers and their trainers. The syllabus has been jointly developed and adopted by the IAEA, the SLD and the Joint Research Centre.



Pictures: Training and exercise of Front Line officers at the JRC Institute for Transuranium Elements, Ispra site.

Following the pilot session at the end of 2009, more than 25 training courses have been organized for officers from Europe, Asia, Africa and the Middle East. A standard group includes around 15 trainees plus translators. The typical one week training alternates technical lectures and hands-on exercises that simulate potential situations at borders using real nuclear and radioactive materials. In

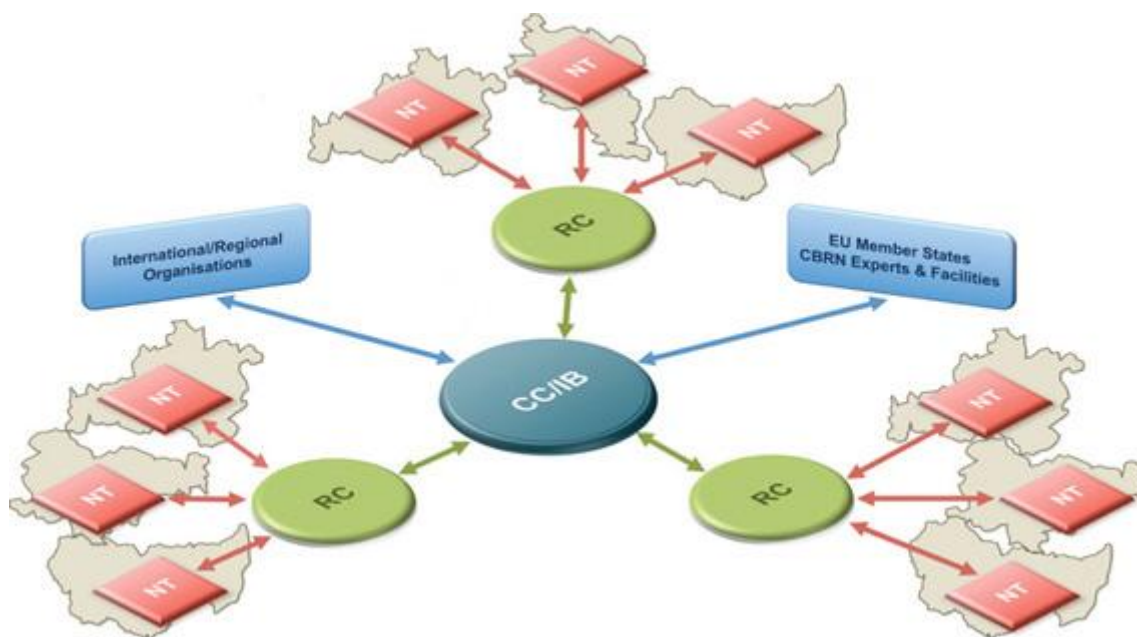
2011, the JRC started including in these courses an awareness raising section on “export control”. The objective is to sensitise the trainees to the closely related topic of enforcement of export control of controlled commodities.

The trainings at the JRC Ispra site are open to external customers and courses are organised for the IAEA or SLD upon request.

The CBRN centres of excellence

The creation of the CBRN CoE aims at implementing a coordinated strategy for CBRN risk mitigation at the international, regional and national levels. The origin of the risk can be criminal (proliferation, theft, sabotage and illicit trafficking), accidental (industrial catastrophes,

in particular chemical or nuclear, waste treatment and transport) or natural (mainly pandemics). The CBRN CoE initiative supports, at national and regional levels, the reinforcement of the institutional capacity needed to fight against this risk.



CBRN National Team (NT) - Regional Centres (RC) also called "regional Secretariats"
- Coordination Committee and Implementing Bodies (CC/IB)

The CBRN CoE project is an initiative of the EU with an EU contribution of €95 million for the period 2009-2013 and is implemented jointly by the EU and the UNICRI (United Nations Interregional Crime and Justice Research Institute).

It is designed to use the EU's networking capabilities to bring together CBRN experts with the aim of strengthening the regional culture of safety and security. The CoE is currently working with 40 countries and holds both bilateral and regional meetings at periodic intervals.

Six secretariats will be set-up in early 2012, covering the regions of South East Europe/Caucasus/R. Moldova/Ukraine; South East Asia; African Atlantic Façade; the Middle East; North Africa; and shortly, Central Asia Sub Saharan Africa and Gulf Cooperation Council regions should be the last two regions to be covered (end 2012). The secretariat plays a major role in ensuring there is a good level of cooperation and coordination with

Partner Countries through their National Focal Points and CBRN National Teams and facilitates the implementation of projects in the region. In particular, the secretariats are responsible for supporting countries in the identification of needs, formulation of project proposals of a regional concern, development and improvement of CBRN national action plans and execution of the selected projects. Every six months the regional secretariats organise a round-table meeting for all National Focal Points in the region to coordinate activities, exchange views and opinions and to ensure that the CoE networks properly address legal, regulatory, control, scientific/technical, enforcement, judicial and organisational issues in order to adequately mitigate CBRN risk. In addition they address needs through specific tailored projects, and membership of an international network of CBRN experts. At regional level - institutional capacity building, strengthening of existing networks and enhanced regional cooperation.



CBRN CoEs cycle of activities

In 2011, 19 new projects in the area of CBRN risk mitigation with an overall EU contribution of €16 million were selected for funding. The implementation phase will begin in the second half of 2012, following the completion of the selection and contractual procedures. These will be carried out in close cooperation with CBRN CoE National Focal Points, National Teams, National CBRN experts, CoE Regional Secretariats.

The selected projects will be implemented in the following regions: African Atlantic Façade, Middle East, North Africa, South East Asia, and South East Europe/ Caucasus/ R. Moldova/ Ukraine.

Additionally, pilot actions will be carried out in Sub-Saharan Africa and Central Asia.

Nuclear safeguards within TACIS and INSC

A strong engagement in nuclear safeguards activities and commitments has been secured in various TACIS (Technical Assistance to the Commonwealth of Independent States) projects and a number of these projects are still running with the main focus on safeguard actions in Russia. The projects are being implemented through the different JRC research institutes using their key expertise in the targeted nuclear safeguards fields. The

total project balance amounts to more than €9 million with 2014 as the target end date of implementation.

It is notable that the involvement in nuclear safeguard using funds from the Instrument for Nuclear Safety Cooperation (INSC)¹⁹ has not

¹⁹ Council Regulation (EURATOM) No 300/2007 of 19 February 2007 establishing an Instrument for Nuclear

been very strong during its first programming years. However, the focus has changed with new regional initiatives in nuclear safeguards funded under INSC, specifically:

- adoption of a €2 million project in 2011 "Nuclear Safeguards – Brazil and Argentina", in which support is provided to the regional safeguard organisation ABACC (the Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials) which is in charge of applying a full scope safeguard system in the two countries.
- proposal of a €3 million project in 2012 "Establishing a Regional Nuclear Forensics Network" providing support to the regional organisation Science and Technology Centre in Ukraine (STCU).. The project will enhance the nuclear safeguard capacities by supporting the nuclear forensics in the region encompassing Georgia, Ukraine, Azerbaijan and R. Moldova.

Activities under the Instrument for Pre-Accession Assistance (IPA)

The Instrument for Pre-Accession Assistance (IPA)²⁰ is the financial instrument for the EU pre-accession process for the period 2007-2013. Assistance is provided on the basis of the European Partnerships of the potential candidates and the Accession Partnerships of the candidate countries, which means the Western Balkans. Since 2007 a total of 45 projects, €34.2 million are implemented in the areas of nuclear security, safety and radiation protection. 17 projects are implemented by IAEA (€20.3 million) mainly in the field of enhancement of the technical capacity of the regulatory bodies in Bosnia & Herzegovina, Montenegro, Albania, the FYROM, Serbia, Kosovo and Croatia.

Ongoing projects concern the Support to the Serbian nuclear regulatory body for the establishment of registries for radioactive materials and occupational exposures, Operation of the waste processing, Decommissioning of the spent fuel storage pond at Vinca (Serbia) facility.

²⁰ Council Regulation (EC) No 1085/2006 of 17 July 2006 establishing an Instrument for Pre-Accession Assistance, OJ L 2006:210/82

EU support to IAEA

Support to the nuclear security office

The EU has enhanced its support to the IAEA in Vienna, including the regard to promote Nuclear Security worldwide. The EU remains a key donor to the Nuclear Security Fund, with more than €30 million committed and more than 80 countries supported with EU funds since 2004. The EU and the IAEA have closely coordinated their support to third countries in this field including the border monitoring working group. This included the provision of detection equipment as well as training.

The last Council Decision in support of the IAEA (CFSP/2010/585 of 27 September 2010) alone provided nearly €10 million since 2010 to support Nuclear Security measures in 48 States in Africa, Asia, Middle East/Gulf Region, and Latin America and the Caribbean for the following measures:

- Sustainability and Effectiveness of Support provided through earlier Joint Actions²¹
- Strengthening of States' Nuclear Security Support Infrastructure: Establishing National Nuclear Security Support Centres
- Strengthening States Legislative and Regulatory Infrastructure

- Strengthening Nuclear Security Measures for Nuclear and other Radioactive Materials
- Strengthening of States' Capabilities for Dealing with Nuclear and Radioactive Materials out of Regulatory Control

In addition, technical support is provided to the IAEA through numerous consultancies, development of technical guidance related to nuclear detection and forensics, contribution to IAEA training activities, development of training syllabus, developments of concepts such as "core capabilities in nuclear forensics", participation in the co-ordinated research program on detection and analysis of seized samples. Currently, the EU is performing a project with IAEA which aims at improving the usability of the IAEA Illicit Trafficking Database.

²¹ CFSP/2004/022/IAEA I, CFSP/2005/020/IAEA II, CFSP/2006/029/IAEA III and CFSP/2008/020/IAEA IV

Support to the IAEA nuclear safeguards and other security activities

The EU operates an effective regional nuclear safeguards system, implementing inspections, reporting and providing technical and scientific support to its Member States, in close partnership with the IAEA. This resulted in full compliance with the additional protocol and the implementation of integrated safeguards in all EU Non Nuclear Weapon States with significant nuclear activities. There are nearly one thousand holders of nuclear materials in the EU. In 2011, they generated 1,9 million lines of accountancy data. A corps of inspectors checks that the physical reality corresponds to the operators' declarations. The Euratom safeguards system can serve as a model by excellence for other regions worldwide wanting to implement the concept of neighbours checking neighbours. Also the Euratom Supply Agency concept could be considered as a model for other regions.

The EU was pleased to be able to provide its fifty years of experience in controlling nuclear materials to the IAEA group drafting the guidance on applying nuclear materials accountancy for nuclear security purposes. Euratoms accession to the CPPNM was approved by the European Council on the 10th of July 2007 and ratification of CPPNM expected to be completed by all Member States and Euratom before the summer 2012

EU contribution to Enhancing Capabilities of the IAEA Safeguards Analytical Services (ECAS)

The EU has committed since 2010 more than €5 million from the Instrument for Stability to the international ECAS project aiming at the construction and outfitting of the new IAEA Nuclear Material Laboratory in Seibersdorf, enhancing the IAEA's analytical capabilities in nuclear safeguards and security. .



H. Nackaerts IAEA Deputy Director General, Head of the Department of Safeguards, Y. Amano IAEA Director General, Y. Aregbe EC-JRC-IRMM and G. Voigt Director IAEA-SGAS at the groundbreaking ceremony for the new IAEA Nuclear Material Laboratory, Seibersdorf, 7 Sept. 2011.

Multilateral Nuclear Assurances

To support Multilateral Nuclear Assurances (MNA) initiatives, a contract has been signed with IAEA to contribute to the Low Enriched Uranium Bank for the Utilization of Nuclear Energy (€20 million). The "LEU Bank", owned and managed by the IAEA, will supply countries introducing civil nuclear programmes

with secure nuclear fuel, thus limiting the associated proliferation risks. As for the participant States this scheme will reduce the risks of fuel supply disruption due to political reasons

The concept of Multilateral approaches to the nuclear fuel cycle have been envisaged for

decades. An IAEA-controlled nuclear fuel bank is essential to reducing global nuclear dangers because the same enrichment technology (e.g. centrifugation) can be used to produce both low enriched uranium for nuclear power reactors and high enriched uranium for nuclear weapons. Thus, multilateral approaches to the nuclear fuel cycle, in general, and creation of nuclear fuel bank, in particular, have potential to facilitate peaceful use of nuclear energy while providing the international community with additional assurance that the sensitive parts of the nuclear fuel cycle are not unduly disseminated and consequently are less vulnerable to misuse for non-peaceful purposes.

The specific objective of the Instrument for Stability contribution to this project is to support, as a first step, the nuclear fuel bank option adopted by the IAEA, while ensuring compliance with basic criteria such as market compatibility, security of supply, consistence with existing international non-proliferation treaties and agreements and the absence of any negative proliferation impact.

A Council Joint Action (up to € 5 million) to support security related activities (the so-called 2nd Pillar), has been prepared by competent Council bodies, in co-operation with the Commission. The Council contribution would be used for security related costs (e.g. containers for secure transport and storage).

The European Commission cooperative support programme (EC-SP)

The EU has continued to provide important technical support to the IAEA in the field of nuclear safeguards through the European Commission Cooperative Support Programme. The 30 years anniversary of this programme was celebrated in Vienna on 13 October 2011.

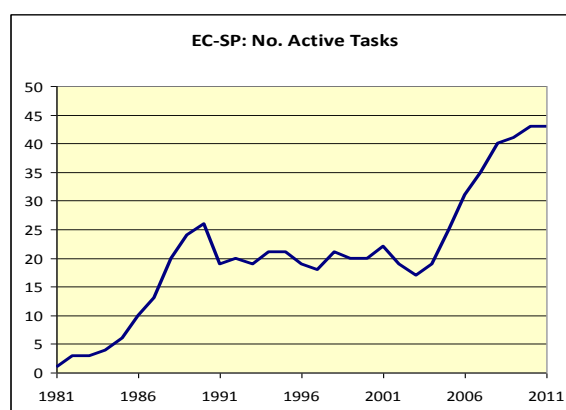
The Joint Research Centre (JRC) of the European Commission operates the EC-SP in close cooperation with the EC Directorate General for Energy (DG ENER in charge of the implementation of the Euratom safeguards system. Two JRC institutes with a scientific and technical work programme in the field of Nuclear Safeguards are actively collaborating with the IAEA under the framework of EC-SP: (a) the Institute for Reference Materials and Measurements (IRMM), Geel, Belgium, and (b) the Institute for Transuranium Elements (ITU), Karlsruhe (Germany) and Ispra (Italy) sites.

Since 1981, the EC-SP has been involved in as many as 117 tasks, of which there are 43 currently active. Working areas include:

- Measurement techniques: including destructive analytical techniques and particle analysis, non-destructive assays and process monitoring techniques. It also includes the development of reference

materials and particles targeted to Safeguards needs.

- Containment, Surveillance and Sealing/identification techniques
- Information collection and treatment, including analysis of trade data
- Training of inspectors: jointly with EURATOM inspectors or targeted to IAEA needs.



Picture: The progression of the number of active tasks since 1981

Other international cooperation

UNSCR 1540 (and 1977)

In accordance with the EU strategy against the proliferation of weapons of mass destruction, which sets the objective of fostering the role of the UN Security Council and of enhancing its expertise in meeting the challenges of proliferation, the EU supports the implementation of the UNSCR 1540 (2004) and its extension decision 1977 (2011)²². The EU has implemented Council Decision 2008/368/CFSP²³ with a financial amount of €0.475 million. A new Council Decision is endorsed at working group level, and will soon undergo budgetary negotiations in view of its adoption by the Council. It shall consist of capacity-building to establish and maintain physical protection and accounting of sensitive dual use materials. The objective of the measure is to promote capacity-building on national and regional levels to advance full implementation of the UNSCR 1540 (2004) by focusing on one of the resolution's key areas, namely, the physical protection and accounting of "related materials". To this end, the EU will assist States to fulfil their requirements to (a) develop and maintain appropriate effective measures to account for and secure such items in production, use, storage or transport; and (b) develop and maintain appropriate effective physical protection measures.

- *Strengthening of capacities for national implementation and sub regional coordination*

by facilitating through United Nations Office for Disarmament Affairs (UNODA)²⁴, in cooperation, as appropriate, with other international, regional and sub-regional organizations and entities, practical steps to implement key requirements of the UNSCR 1540 (2004) at the national level, in particular through support of country visits or country specific activities to be conducted by the 1540 Committee, with the consent of the States concerned.

- *Support for practical implementation of recommendations of the 2009 Comprehensive Review* The objective of the measure being to enhance international cooperation and raise public awareness of importance of implementation of the UNSCR 1540 (2004).

²² Resolution 1977 (2011) adopted by the Security Council at its 6518th meeting, on 20 April 2011 ([http://daccess-ods.un.org/access.nsf/Get?Open&DS=S/RES/1977%20\(2011\)&Lang=E&Area=UNDOC](http://daccess-ods.un.org/access.nsf/Get?Open&DS=S/RES/1977%20(2011)&Lang=E&Area=UNDOC))

²³ Council joint action 2008/368/CFSP of 14 May 2008 in support of the implementation of United Nations Security Council Resolution 1540 (2004) and in the framework of the implementation of the EU strategy against the proliferation of weapons of mass destruction – OJ L 2008: 127/78

²⁴ See http://www.un.org/disarmament/HomePage/about_us/aboutus.shtml

G8 global partnership

The EU continues to be an important contributor to the G8 Global Partnership. Under the instrument for stability, it plans to spend around €300 million with various third countries on chemical, biological, radiological and nuclear risk mitigation during the period 2007-2013. G8 Global Partnership activities

include assistance on nuclear security, engagement of relevant scientists, export controls, border monitoring, illicit financing, biosecurity and, more generally, illicit trafficking of nuclear and radiological materials.

Global Initiative to Combat Nuclear Terrorism (GICNT)

The EU is strongly committed to contribute, in a tangible and constructive way, to the activities of the GICNT. The EU continued in 2011 and 2012 to be actively involved in working together with the other partner nations and observers to the GICNT in order to strengthen international co-operation to advance nuclear forensics technical capabilities, information-sharing mechanisms

and training and education of nuclear security relevant personnel. The EU is actively involved in the activities of the GICNT Implementation and Assessment Group, in both areas of nuclear detection and response mechanisms, including nuclear forensics, as well as the newly established working group on response and mitigation, priority areas of the GICNT in combating nuclear terrorism.

Euratom agreements

Euratom's international nuclear cooperation agreements covering trade in nuclear materials and equipment include obligations on both parties on the adhesion to the strictest international standards in physical protection and nuclear export controls. This reflects the Euratom policy of encouraging the responsible use of nuclear energy by those states which choose to include nuclear in their energy mix.

In the field of R&D nuclear safeguards and security, a new Agreement was signed by Euratom and the DOE on the 2nd of November 2010, replacing the old agreement signed in 1995. In addition to nuclear safeguards R&D areas, new areas of cooperation have been defined: technologies and methodologies related to combating the illicit trafficking, nuclear forensics and related data bases, open source information tools; technical aspects of export controls including technical training, emergency management, nuclear security training courses. Moreover, DOE and Euratom decided

to enhance their coordination efforts to cooperate with third countries and relevant international organizations that may contribute to the improvement of nuclear security.

The cooperation with Russia has been mainly developed through the EU TACIS programme. Many projects in the field of nuclear material accountancy and control and on combating the illicit trafficking of nuclear materials including nuclear forensics have been implemented as the result of a very close cooperation between the EC and its Russian partners.

With the Japan Atomic Energy Agency, the scope of cooperation has been enlarged to include in addition to nuclear safeguards, activities in the field of nuclear security detection and forensics. Cooperation on nuclear security training represents an important component of the cooperation, mainly in relation to the nuclear security support centre being established by Japan.

Moreover, the preparations for the 2012 EU-Japan Summit are under way and in addition to a review of the progress in implementing the Annex of "EU-Japan Cooperation following the Great East Japan Earthquake and the Accident at the Fukushima-Daiichi Nuclear Power Plant"²⁵, it is expected that some new proposal for increased cooperation in the field of nuclear security and nuclear safety would be included

Euratom and China have recently started implementing the Euratom/China agreement. In the area of safeguards and security, a meeting between EC and China Atomic Energy Authority (CAEA)²⁶ was organised in Beijing last march 2011 where the areas of cooperation have been defined.

Finally we should mention the role of the European Safeguards Research and Development Association (ESARDA)²⁷ and the Institute of Nuclear Materials Management (INMM)²⁸ as platforms for technical cooperation, exchange and convergence on nuclear safeguards and nuclear security including nuclear forensics.

²⁵ See for instance
http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/EN/foraff/122303.pdf

²⁶ See
<http://www.caea.gov.cn/n602670/n621894/index.html>

²⁷ See <http://esarda2.jrc.it/about/index.html>

²⁸ See http://www.inmm.org/About_INMM.htm

International working groups

The Border Monitoring Working Group (BMWG) was created in 2006 between the US, the EU and IAEA. This working group was initially set up with the aim of coordinating the support given by the members to third countries in order to not duplicate their efforts and to optimise their resources. Now the mission of the BMWG has evolved towards the implementation of joint projects where the members are sharing the efforts. In the specific area of nuclear forensics, the Nuclear

Forensics International Technical Working Group (ITWG) takes a prominent position, as this group gathers the key players in the area and is in continuous dialogue with the IAEA. Exchanging experience and international cooperation are very important for advancing nuclear forensic science and thus for sustainable success in combating illicit nuclear trafficking, terrorism and proliferation. The both working groups are co-chaired by the European Commission.

Nuclear forensics

The EU through its Joint Research Centre has been involved in nuclear security related activities and in nuclear forensics in particular for two decades. Different types of activities are carried out: nuclear forensics support to EU member states, nuclear forensics research and development, implementation of nuclear security projects in Eastern Europe and other regions of the world and training and education activities.

Illicit nuclear and other radioactive material continues to be detected by EU Member States and often requires nuclear forensic investigation. In more than ten nuclear security incidents, the JRC provided detailed analysis of samples of nuclear material intercepted in the Netherlands, Finland and Moldova. The material ranged from scrap metal contaminated with uranium of various enrichments to depleted uranium metal. The unique capabilities and nuclear forensic competence available at the JRC Institute for Transuranium Elements were used for identification of the likely origin of the materials and appropriate action could then be taken by the member states in which the seizure occurred together with the IAEA.

Nuclear forensics support, however, relies on analytical and interpretational capabilities. These are based on expertise in the nuclear fuel cycle and on the development of nuclear forensics signatures (i.e. parameters which provide hints on the potential origin of unknown nuclear material) and measurement methodologies. Recently, the JRC has developed methods for highly accurate age dating of uranium and plutonium, for geolocation of uranium ore concentrates, for the rapid identification of uranium compounds including process related impurities and for

production of uranium age dating reference materials.

A project for separating DNA (the so called "genetic fingerprint") from radioactively contaminated evidence and for novel technologies for visualizing fingerprints (on contaminated matrices) is being considered by the European Commission. The project has been submitted by a consortium of European entities which include national laboratories, law enforcement and small and medium enterprises.



Picture: Material characterization and Data interpretation at the EC/JRC Institute for Transuranium Elements

In the framework of the Instrument for Stability, the JRC is implementing a project in Russia, Moldova, Georgia, Ukraine and Azerbaijan on combating illicit trafficking which includes the development of a national response plan, establishing core capabilities in nuclear forensics, provision of equipment and training of experts. The close and successful cooperation with the Bochvar Institute in Moscow is being continued for further enhancing the nuclear forensic capabilities and for continuing the joint work on the nuclear forensics database. Another project aims at

improving the analytical capabilities of the nuclear forensic laboratory in Ukraine. This will be encompassed by a sustainability project (currently in the approval process) which aims at establishing a regional nuclear forensics laboratory network in the GUAM countries (Georgia, Ukraine, Azerbaijan and Moldova).

Within the EU initiative on CBRN Centres of Excellence, the JRC is implementing a pilot project on nuclear forensics awareness in South East Asia. Project activities were closely coordinated with the US DOE and workshops

and trainings were jointly performed. This includes a workshop on nuclear forensic awareness and development of a national response plan, held in Singapore in September. 2011, a workshop on technical nuclear forensics, held in Bangkok in December 2011 and a hands-on training on core capabilities scheduled for April 2012 in Karlsruhe. A follow up project for establishing core capabilities in nuclear forensics in ASEAN countries is being considered in the framework of the Centres of Excellence.

Nexus between nuclear safety and security

The EU has a particular interest in ensuring that the peaceful uses of nuclear energy take place with the highest standards of nuclear safety and security

In the field of nuclear safety including waste management, radioprotection and emergency response, the EU and its Member States have developed common frameworks. After the adoption of a Nuclear Safety Directive in 2009²⁹, the EU has adopted in 2011 binding legislation on spent fuel and radioactive waste management³⁰ which requires the EU Member States to establish national programmes for managing radioactive waste and includes a requirement for these programmes to develop concrete plans for construction of waste disposal facilities.

The EU framework for radiation protection including the control of radioactive sources is currently being revised *inter alia* in view of fully integrating the regulatory control of radioactive sources. The aim is to align the provisions with the IAEA Code of Conduct, particularly in respect of high-activity sources where the aim is to fully align the EU definition of high-activity sealed source with the IAEA categorisation system. The European Commission is also working on improving the follow-up of finds of contaminated scrap to ensure that all orphan sources detected are returned to regulatory control. In the area of radioactive transports, a

legislative proposal has been introduced which will establish an EU-wide system of registration of transporters of radioactive materials ensuring that national competent authorities are aware of carriers on their territory.

The ECURIE (European Community Urgent Radiological Information Exchange) system, which is used for exchanging urgent communications during a radiological emergency is currently being modernised. The EU is also closely cooperating with the IAEA to develop a global radiation monitoring platform based on the EU's EURDEP (EUropean Radiological Data Exchange Platform) system. Both ECURIE and EURDEP are used by all EU Member States plus a number of third countries.

Synergies between safety and security applicable to existing installations are possible, in particular in the area of risk prevention, risk management and emergency preparedness and response. The technologies used for assessment of plant response to accidents can be used for both safety and security purposes and the techniques and methods developed in the field of radioprotection are similar to some of those used in nuclear security. For future installations, synergies between safety and security are also to be guaranteed at the level of the conception design and construction phase, the risk assessment and risk management methodologies, the operation and oversight of the installations and licensing processes.

With regards public health protection, the European Commission is coordinating together with the EU Member States through the EU Health Security Committee preparedness and response to CBRN events and threats. With the perspective of reinforcing this coordination, the European Commission has put forward a proposal for a Decision of the European Parliament and of the Council on serious

²⁹ Council Directive 2009/71/EURATOM of 25 June 2009 establishing a Community framework for the nuclear safety of nuclear installations - OJ L 2009:172/18

³⁰ Council Directive 2011/70/EURATOM of 19 July 2011 establishing a Community framework for the responsible and safe management of spent fuel and radioactive waste - OJ L 2011:199/48

cross-border threats to health³¹. The aim of the proposed Decision is to streamline and strengthen EU capacities and structures for effectively preparing and responding to major public health emergencies.

Following last year's tragic earthquake and tsunami which struck the Japanese east coast, the EU has launched a comprehensive programme for transparent reassessment (called "stress tests") of all the reactors in the EU to ensure that they are not at risk from extreme events. The EU stress tests have two tracks, a safety track and a security track. A specific working group of the Council of the EU was established in July 2011 to deal with the nuclear security aspects of post Fukushima. The Ad Hoc Group on Nuclear Security organized its work along three activities: collecting information from Member States, processing information and preparing an interim report for the European Council. Taking into account the existing good practices shared by the EU Member States and the legal norms identified, the Group will prepare recommendations beyond these good practices. Such recommendations are believed to be aiming at improving general security principles and to contribute to ensuring the highest possible level of nuclear security in the EU. They will be submitted to the European Council in July 2012, as part of the final report of the Group. The Group has noted in particular:

- the importance of ensuring an efficient interface between safety and security, not only in order to maximise synergies between existing tools and measures but also because of the consequences a safety incident could have on the security at a nuclear facility;
- the value of making a better use of the various instruments and for an international cooperation while preserving an adequate level of confidentiality;

- the importance of ensuring effective coordination and communication between the multiple actors, private and public, involved in security matters.

In the course of 2012, the Group will continue to work on encouraging exchange of existing practices and identifying possible improvements, e.g. drawing on IPPAS (International Physical Protection Advisory Service) missions or self-assessment by the EU Member States. This work will be conducted under the necessary confidentiality arrangements, and should lead to the elaboration of detailed methodological (generic) recommendations to be contained in the final report.

When complete, it is possible that the output from the safety track of the stress tests will also yield important lessons for nuclear security. The EU neighbouring countries operating, owning or planning nuclear power plants have also committed to doing similar stress tests, and the experience gained with this process can benefit nuclear safety and security worldwide.

The EU Euratom framework programme 7 for nuclear research and training has also been re-focused for the two-year extension (2012-2013) towards nuclear safety and security. In particular, research topics addressing the impact of the nuclear accident in Japan on severe accident management, emergency management and nuclear education and training in Europe and the consequences of combination of extreme external events on the safety of nuclear power plants have been added to the work programmes."

³¹ COM(2011) 866 – 08.12.2011

